ABSTRACT

A comparator-based switchmode power converter monitors the most negative of the tip and ring line voltages, to control the supply voltage to a SLIC. The voltage applied to the SLIC's power terminals is slightly higher than the sensed voltage for different loop signaling conditions, including loop start, ground start balanced ringing. The switchmode converter includes a comparator coupled to a DC-DC output node downstream of a MOSFET switch installed in a DC supply rail of a source of DC supply voltage, and coupled to a power supply terminal of the SLIC. The comparator is also coupled to a set point node, which is coupled through a voltage offset path to each of tip and ring portions of the telephone line. The comparator functions to control the conductivity of the MOSFET to provide a modulated DC voltage to the SLIC, in accordance with that one of tip and ring loop voltages having the largest magnitude, so as to provide power supply tracking during loop current, superimposed voice signals, loop start, ground start and balanced ringing.